

JOURNAL
OF
SOUTH AFRICAN BOTANY
VOL. VII.

WILLIAM JOHN BURCHELL, BOTANIST.

By HELEN M. MCKAY.

Part III. : BURCHELL IN ENGLAND AND BRAZIL.

TEN YEARS IN ENGLAND.

Burchell sailed from Cape Town, with his forty-eight packages, on board a small trading vessel, *Kate*, on 25th August, 1815, and arrived at St. Helena on 13th September.

All his journals giving information about his activities after 2nd September, 1812, are still missing ; so it is well to bear in mind that statements made in this article are founded on facts gathered from his letters, his drawings and the manuscripts dealing with his collections.

He visited some of his old haunts in St. Helena, and he remarks on the prosperity of the *Chenopodium ambrosioides* he had planted.* During his short stay of four days he made some beautiful sketches, but none of them are of botanical interest.

His arrival at Fulham on 11th November, 1815, caused a flutter in the heart of William Swainson⁽²⁸⁾ who, though unacquainted with Burchell at the time, became, about four years later, one of his greatest friends. Letters written to Swainson by Burchell are preserved in the collection of manuscript letters in the Library of the Linnean Society of London, and, from them, much can be learned about the great naturalist.

Swainson in his autobiography, which he published in 1840, in the volume *Taxidermy* (Cabinet cyclopaedia series), says :—

“ Happening to spend an evening with Mr. Lambert⁽⁵⁾, the celebrated botanist, he told me he had just had a letter from a friend of his, who had been many years at the Cape, and had brought with him a collection which filled two waggons ! This friend was no other than Mr. Burchell. I heard the news with dismay : for what, thought I, can be now left in South Africa more than the gleanings of a harvest already reaped ? A little consideration

* *The Journal of S. Afr. Botany*. Vol. VII, Part I, p. 4. Jan., 1941.

might have showed me the absurdity of this opinion: but as I could not submit to follow in the wake of another, I at once determined to relinquish the Cape, and choose some other quarter yet untrod by the naturalist."

Swainson went to Brazil in 1816, but because of war in that country, was unable to journey into the interior. That was left for Burchell to do.

For about four years after his return from South Africa, Burchell was much occupied with horticulture. The large nursery had been leased, in 1813, by Matthew Burchell to Messrs. Whiteley & Co.: but he still retained gardens and greenhouses in the immediate vicinity of Churchfield House, the family residence. Here, and in Messrs. Whiteley's nursery, Burchell busied himself in 1816 with the sowing of South African seeds and bulbs he had collected.

A record of his work in this connection is preserved in the *Hortus Fulhamensis* MS. now in the Library of the Herbarium at Kew. In this volume there are over two thousand entries: in it the locality where the seeds or bulbs were gathered, the dates when they were collected when sowed, came up, and in several cases, died, are duly given.

In 1815 Messrs. Ridgways, London, published *The Botanical Register*, which was edited by J. Bellenden-Ker⁽³⁹⁾ and which had been started in opposition to the *Botanical Magazine*. Burchell was introduced to the public in Volume II of this series, 1816, in connection with *Amaryllis coranica*, t. 139. The text reads:—

"Besides being new and ornamental, the present species has a claim to our interest as the first-fruit offered to the public from the long and arduous expedition of Mr. W. J. Burchell. The following are the memoranda with which he has obliged us concerning the subject of this article. 'I discovered this beautiful plant in the Corana country, in the interior of Africa, several days' journey beyond the Orange River, in the latitude of 28 degrees south. [C.G. 2532. 20.12.1812, on the way south, between Kuruman and Kosi Fountain—Kuruman District.] It grew in a grassy plain of sand, in such profusion as to remind me of a vast bed of choice flowers. The air was perfumed by an odour from the blossoms resembling that of the Tuberose. It begins to open its flowers in succession about sunset, and continues in beauty for about a week or fortnight. The bulbs as they stood when I found them were nearly nine inches in diameter, of a spherical form enveloped in a coat found by innumerable integuments, the outermost of which were grown together into a hard brittle mass, forming the exterior bark. From an estimate of the number of the integuments, I should judge the larger bulbs the growth of not less than 200 years, pro-

bably 300. When divested of the external exuviae, the live part does not exceed $4\frac{1}{2}$ inches in diameter. Notwithstanding, those I have brought home have been three years and three months out of ground, they are now growing in my garden in as flourishing a state as on their native spot, and have flowered in perfection. In their own climate the bloom is produced in December, and it is not unworthy of remark how readily they have yielded to the reversal of the seasons in this part of the globe by flowering in June.'

"The drawing by S. Edwards⁽⁴⁰⁾ was taken from a plant in Mr. Burchell's garden at Fulham."

There is no mention of this *Amaryllis* in the *Travels*, so it can be assumed that Burchell was reserving descriptions such as this for purely botanical publications.

Between 1816-19 about twenty new bulbs were introduced to horticulture by Burchell through the medium of the *Botanical Register*, and among them was *Hypoxis obtusa*, "Mr. Burchell's *Hypoxis*".

The plant was described (Vol. II, t. 159, 1816) by Ker⁽³⁹⁾ and a drawing made by Sydenham Edwards⁽⁴⁰⁾.

In Burchell's unpublished journal,* under the date of 28th August, 1812, when he was on the plain south of Litakun [Kuruman], is the following:—

"I collected on the road 4 immense bulbs of *Haemanthus toxicarius* and 4 of *Hypoxis obtusa*."

Of the *Hypoxis* (C.G. 2247/2, Bulb 27), he says in his *Ephemeris*, p. 59:—

"This differs from all the Cape species in the obtuseness of the petals: in its flowers opening and continuing open in every state of the weather and in the golden color of the flowers. In the other species the flowers are never found to be open but in warm sunny weather."

This interesting note does not appear in the *Botanical Register*. For a reproduction of Burchell's own drawing of this *Hypoxis*, see Plate IX.

Because of his collection of bulbs, Burchell came in direct contact with such patrons of horticulture as Prince Leopold of Saxe-Coburg to whom he gave a hundred plants; with Lord Carnarvon who had large gardens and conservatories in Hampshire and whose relative, the Hon. William Herbert⁽⁴¹⁾, paid frequent visits to Burchell while preparing his various papers on bulbous plants, particularly *Amaryllis*.

Burchell's sister Mary, when writing in June, 1817, to another member of the family, says: "Lord and Lady Caledon called to see William".

* In the Library of the Hope Dept. of Zoology (Entomology) Univers. Mus. Oxford.

No doubt they enjoyed renewing acquaintance with Cape blooms, for by that time several bulbs were flowering.

Another welcome visitor was Rev. C. I. Latrobe, the Secretary in London for the United Brethren's Missions to the Heathen. He had been in South Africa in 1815-16, and brought news of Hesse, Villet, Polemann and other Cape Town friends. Burchell supplied Latrobe with the scientific names for the list of trees, shrubs and plants in the work he published in 1818, entitled *The Journal of a Visit to South Africa*.

This contact must have acted as a stimulus to Burchell, for, by the middle of 1818, he was working seriously with the material in his herbarium, dispersing some of its contents among experts and making a choice of botanical matter for inclusion in his *Travels*.

He consulted Sir James Smith⁽⁴²⁾ about his *Croton gratissimum**; he was in touch with R. A. Salisbury⁽⁷⁾ about his *Erica*; with Haworth⁽³⁶⁾ about his succulents. To Dawson Turner⁽³⁰⁾ he had handed over all his *Fuci*. In Volume IV of Turner's work on *Fuci*, which was published in 1819, tribute was paid to Burchell in the following words:—

“*Fucus cornutus*. I have lately received it in a more perfect state from my friend Mr. Burchell. For my part I can only lament that he did not return sooner; this work might otherwise have received material assistance from his kindness.”

Burchell met A. P. de Candolle, the great Genevese botanist, when he came to London in 1816 to consult the Banksian and Lambertian herbaria, and correspondence was carried on between them for several years. The young naturalist notes in his *Memoranda Botanica* MS. II, that several of his plants were to be mentioned in the second volume of De Candolle's *Systema Naturale*.

Writing to W. J. Hooker in March, 1819, Burchell says:—

“If you happen to have my last letter still by you, you will find there an exposition of my views and it will be unnecessary to repeat how desirable I think it, that my mosses should be given to the world by so able a pen and pencil as yours. With this view I have the pleasure of sending you a copy of my memoranda respecting the numbers you have prepared for publication.

“I should mention that it was my practice when on my travels to give such specific names to my plants as the view of them in their native place of growth naturally suggested without attending to their being new or not, which I had not always on the spot, time to ascertain: but my object in thus naming them was that on my return to England, I should furnish all the new species with more

* *Travels*, Vol. II. p. 263.

appropriate names than an inspection of the dried specimens in the herbarium might probably suggest to me. When several names offered themselves to my mind equally eligible, I made a memorandum of them all."

This letter throws light on Burchell's ideas on classification and supplements the remarks made on the subject in the *Travels*.

By 1819 Burchell was known to the leading botanists and horticulturists in Britain, but he never became in any way associated with the Horticultural Society, though he was on friendly terms with its officials. Several important botanists in European countries had heard of his collection, and in 1820 Robert Brown⁽⁴³⁾ perpetuated his name and his work in South Africa by designating a genus of Rubiaceae, *Burchellia capensis*.

From 1819-1823 Burchell busied himself with literary work. After his appearance before the Committee of the House of Commons, reporting on the poor laws, and the publication of his *Hints on Emigration to the Cape of Good Hope* in 1819, he retired to a quiet spot near Sevenoaks, Kent, and began writing his *Travels*. What a pity it was that his literary work stopped where it did! When handling his letters and manuscripts, it can be appreciated how the zeal for watching and recording the growth of his South African treasures, the searching for a niche for them in the ever growing botanical nomenclature, and the thrill to be got when comparing some of his specimens with those actually gathered by Thunberg (for Agardh⁽⁴⁴⁾ had lent him some), all helped the dreamer to dream, but not to realise what a great work was being left unfinished.

For Plate X there has been chosen his drawing of one of the species of the still very imperfectly known genus, *Massonia*, his *M. candida* (*M. longifolia* var. *candida*, Fl. Cap. VI, p. 415). He gathered Bulb 109, C.G. 6197/5 on 10.10.1814 "at our station on the Eastern Bank of the Little Brakke River" (Mossel Bay). In his notes he tells us "the flowers smell like a Gansels Bargamot Pear". Burchell's drawing was made in 1817, but it was not until 1823 that a description of the plant appeared in the *Botanical Register*, t. 694. The drawing accompanying the text was made by M. Hart from a plant that had been raised two years before (1821) from seed obtained from Burchell.

By the time he had finished the writing of the second volume of *Travels*, Burchell was ready to go a-wandering once more, and as his friend, Dr. Hooker, had, in the meantime, settled as Professor of Botany in the University of Glasgow, he set off for Scotland in June, 1824.

From his *Memoranda Botanica* MS. II come just a few hints as to what took place there. He collected between Ben Lawers and Loch

Lomond, around Lanark and Edinburgh and in the Clova Mountain, and, later on, exchanged specimens, living plants and seeds with the Botanic Gardens both in Glasgow and Edinburgh.

A friendship sprang up between him and Robert K. Greville⁽³⁵⁾, and though a few of Greville's letters to Burchell have been noted, full research into the correspondence has been interrupted owing to the present world war. Here is, however, an interesting extract from a letter written by Greville from Edinburgh on 9th November, 1824, to Winch⁽⁴⁵⁾*:—

"Our first excursion to the Highlands (that of Dr. Hooker's class) was very productive. He was joined by Mr. Burchell, Mr. Arnott⁽⁴⁶⁾, Dr. Townsend and myself. . . . How strikingly a little knowledge and a botanical eye is shown in this excursion. Hooker's pupils were above twenty in number, yet all the good things were found by the few scientific gentlemen who joined his party (always excepting Mr. Earle's share of *Arenaria rubella*). In our second excursion we had only Hooker, Burchell and myself with Drummond of Forfar as a sort of botanical guide. We found nothing positively new; but to make up for it, several of the very rarest British plants."

On his way south Burchell visited the Lake District and Liverpool where Swainson entertained him. Brazil was now the chief topic of conversation, for Swainson, who had returned from Rio de Janeiro in 1819, rekindled the desire, which was started while Burchell was contacting captains from "the Brazils" at St. Helena, to see for himself the beauties of that wonderful country.

He became restless and immediately set about searching for information as to how he could get into this foreign land.

BRAZIL.

At the close of the Napoleonic wars, the King of Portugal, who had been exiled in Brazil, returned to Lisbon and left his son, Pedro, as Regent at Rio de Janeiro. Before a year had passed the Brazilian States drew up a constitution and installed Pedro as Emperor. King John, jealous of his son's new power, asked Britain to intervene. Canning, then Britain's Foreign Secretary, realised that it was advisable, because of British trade with Brazil, to help to bring about a reconciliation between the old kingdom and the new empire, and so in March, 1825, to carry on negotiations for this, he sent a special mission under the leadership of Sir Charles Stuart to Rio de Janeiro.

* The Linnean Society of London. Letters MSS.

Burchell managed to obtain permission to sail with this mission. He had to make hurried preparations. He consulted Swainson about his equipment and gathered all the information he could about the visits of other botanists to South America.

He sailed on board the *Wellesley* from Portsmouth on 15th March, 1825, and landed at Lisbon on 25th March. Here he remained till 25th May. He botanised, sketched and took "regular lessons of a Portuguese Master for the Portuguese language, to get a right pronunciation". [So he wrote to his Father].

Only one day was spent at Funchal and two days at Santa Cruz, Teneriffe: but even in that short time he collected and sketched. His notes relating to the herbaria of Portugal, Madeira, Teneriffe, are to be found in his *Memoranda Botanica* MS. I, Part II. Some sheets of specimens, all in a good state of preservation, of the Madeira and Teneriffe collections are in the School of Botany herbarium at Oxford, but the bulk of the material gathered is in the Kew herbarium.

He left Teneriffe on 3rd June and landed at Rio de Janeiro on 18th July.

In a letter* to R. A. Salisbury, dated 14th August, 1825, he says:—

"In forming my ideas, in England, of what it might be to accompany an embassy, I certainly have been very much mistaken; but at any rate, I am now in South America and have at least the gratification of finding Nature under all her shapes, always interesting. As to the Botanical riches of this country (at least what little I have hitherto seen) you cannot form an adequate idea, even though you pictured to yourself all the fine plants of our hot houses growing wild and clothing the hills and valleys with their utmost luxuriance. At the Cape of Good Hope you are walking in a richly stored greenhouse: here you walk into one of the great hot-houses of Nature. . . . Mountains and rocks, forests and rivulets and plants of remarkable forms combined in the most picturesque manner, tempt one to turn often from Natural History to Painting."

There are over two hundred of Burchell's Brazilian drawings in the Gubbins collection, but very few are botanical sketches. In Plate XI, there is reproduced his drawing of the palm trees, to which he makes very frequent reference in his letters.

In Hooker's *Botanical Miscellany*, Vol. II, p. 128-133 (1831), there is an account of "Mr. Burchell's Brazilian Journey." The article gives the contents of two letters, one written to Hooker, from Goyaz in April, 1828, and the other from Fulham in November, 1830, immediately after Burchell's return to England.

* The Linnean Society of London. Letters MSS.

In 1905 Professor (now Sir) E. B. Poulton gave an address in Cape Town and it was afterwards printed in the *Report of the British and South African Associations (Science)*, Vol. III, p. 57-110; in it Burchell's Brazilian journey is described. These are the only published accounts of his South American travels. Some more detail may be added to them from letters written to his relatives, to Swainson and Salisbury, and from the manuscripts dealing with his herbarium.

ROUTE.

The map, Plate XII, gives a very general idea of the ground he traversed. He encountered many difficulties when he came to arrange his itinerary, and much of the country he actually passed through was other than what he wished or planned to visit.

He remained in Rio from July, 1825, till February, 1826, and all that time was endeavouring to obtain official permission to journey across country to Peru. A commercial treaty between Britain and Brazil was concluded in November, 1825; but the embassy had to remain in the country till the official ratification of it arrived from England. One of the members, Dr. Ridgway, was released from his duties, and as he was returning to London, Burchell sent in his care the first consignment of his botanical, entomological and mineral collections, as well as many drawings.

He made a short excursion into the Province of Minas Geráës in November, and in January, 1826, he writes hopefully about engaging a servant to go with him and natives to drive his mules, but March sees him still in Rio. In a letter* to his sister Mary, he says:—

“About the end of last November, when Sir Charles was likely to leave Rio for some time, I requested him to solicit from the ministers of the Emperor the proper passports and recommendation for me on my intended journey; this he told me he did the same day and the prime minister promised to do all I wished. But the day after Sir C. sailed, there was a complete change of ministers and the business fell to a new man into whose hands my letter of request went as one of the papers of office and about a couple of weeks afterwards, I received through the English Consul two letters addressed to the governors of the two districts I should have to travel through. These appeared to me and to the Consul not sufficiently strong in their recommendation and he immediately went to the then minister and taking a copy of my *Travels* with him, explained more clearly who I was and what I wanted. The

* Letters written to his family are in the Library of the Hope Dept. of Zoology (Entomology) Univers. Mus. Oxford.

minister was till then quite in the dark : but in consequence of this explanation he sent to the Consul a better and more full passport and an additional and more flattering recommendation. Thus this business now stands. The ministry was again changed by the emperor soon after I got my last passports. I have never seen Sir C. since the day I have above alluded to (end of Nov.) but I hope he will return from Bahia (for he is gone there again in pursuit of the Emperor) before I finally leave Rio."

His patience was sorely tried and he did not manage to get away from Rio till September, 1826 ; but in the meantime he made a short excursion in the Serra dos Orgãos (Organ Mountains) and another into the Estrella Mountains, and philosophically writes to his sister :—

"My protracted residence in this part of Brazil not only prepares me better for my journey : but, by completing more fully the collecting of what may be found about here, lessens in proportion that which I should otherwise find to do on the road. I already know much more of the Portuguese language than I did of the Dutch before I started from Cape Town ; and all my collections, observations and drawings are already more than double those which I made in Cape Town before I commenced my journey. I mention this merely to show that my eight months' residence here has not been mis-spent. I have received no letters from any one except one lately from Dr. Hooker. Remembering that I am indebted for some specimens to him in return for some he gave me at Glasgow, I shall take an early opportunity of sending him an equivalent in kind, by a vessel going to Glasgow direct."

Writing to his father in August, 1826, he says he is expecting to leave Rio in September : that he has received an additional passport from Lord Ponsonby who was at Rio on his way to Buenos Ayres as British envoy ; that he intends shipping all the collections he had beside him to England, and remarks :—

"My intended journey seems to have excited a good deal of interest among the Europeans here ; but the illiterate Brazilians take no notice of it."

He planned to go from Santos to San Paulo and there procure a troop of twenty mules and horses with four or five hired attendants as muleteers. He would then proceed to explore the provinces of San Paulo, Goyaz, Cuyabá and Mátto-grosso, and pass into Peru with the intention of staying at Cuzco in order to examine the antiquities of the empire of the Incas both there and in the country surrounding the great lake of Titicaca. He thought he might then go to Lima and finally make his way to Buenos Ayres.

He was well warned that he would not be able to carry out this plan, for there were innumerable obstacles to hinder the progress of a scientific traveller encumbered with a quantity of baggage and instruments.

Undaunted, he sailed from Rio and arrived at Santos on 12th September, 1826, and remained there for three months. He carried with him, besides his passports, eighty-four letters of introduction for use on his journey, and was looking forward to what lay beyond San Paulo,

“as all the road may be said to be unexplored ground with respect to Science, for only one or two collectors have visited it, and these have not yet published any account of it.”

He despatched many specimens and drawings from Santos, and after exploring the neighbouring districts, and living for three months in a solitary hut in the middle of the forests at the foot of the great range of mountains, Sierra da Cubatao, he reached San Paulo in January, 1827.

He was now nearly under the Tropic of Capricorn and his collections were already more than half that of his African. His latest herbarium number was now 4,626, and, what was more important, all the specimens were fully described.

At San Paulo there were no inns or lodging-houses, but he was “able to rent a house of eight rooms, on the edge of the city, for about six shillings a month”. What a contrast to his South African wagon!

The rainy season caused delay, and he admits in a letter written to his mother in June, that he was rather depressed. He found the people dilatory and wearing out his patience when dealing with them, “for what might be done in a day they often required a month.” He made all his excursions around San Paulo on foot and added much to his collections. Before setting off for Goyaz he despatched what he had gathered to Santos for shipment to England.

He arrived at Goyaz in November, 1827, where he remained for nine months; while there he learned of his father's failing health. He decided to change his plans, to cut out his proposed journey to Peru, and make for the northern port of Pará and, from there, sail direct to England.

He was the first Englishman to enter the city of Goyaz, and in it, he spent the rainy season of 1827.

His American *Catalogus Geographicus* number had now reached 7,063, and he remarks in a letter* to Hooker:—

“In this country of illiteracy, no one is found to whom notions of science are intelligible. Here Nature has done much—man nothing: here she offers him innumerable objects of admiration

* *Hooker, Sir W. J. Letters MSS. Vol. LXVI. No. 17, Kew.*

and study, yet he continues to vegetate in the darkness of ignorance and in extreme poverty, the consequence of laziness alone."

He certainly did not follow the example set him; for his collections increased enormously, and he was able to do what he could not do on his South African journey, keep the descriptions in the *Catalogus Geographicus* fully written up.

Still bearing northwards, he reached Porto-Real—Porto Imperial, now Porto Nacional—on 14th November, 1828, and there he had to remain till it was a suitable season to descend the Tocantins River to Pará. In doing this he traversed a route then unknown to science. He reached Pará in June, 1829, but was not able to secure a passage from there till February of the following year. He arrived at Dover on 24th March, 1830. It was a sad home-coming for him, for his father had died in 1829, and as head of the family he had to assume responsibilities for which he was little inclined, but which he faithfully and dutifully performed.

HIS COLLECTIONS.

As has been already noted he had shipped packages of collections from various ports on his route, and though there had been many great difficulties with regard to transport on the last part of his journey, he was able to arrive in England without having lost anything. He had profited by the experience of his South African travel, but had found the tropical climate a great handicap when pressing his specimens.

In his *Memoranda Botanica* MS. I, Part II, he notes that he did not begin to unpack the Brazilian herbarium, which consisted of one hundred and thirty-two packages, till February, 1847, and dealing with the specimens at the rate of three to thirty-five a day, he did not finish till February, 1850.

When writing to Hooker and to Swainson, he told them that a pretty large building would be required if the material was to be arranged for examination, for he had now a herbarium of 140,000 specimens.

It may be well to reproduce here his own account which he gave to Dr. Hooker,* for the *Botanical Miscellany* is not easily accessible to some people who may read this paper. Writing from Fulham on 4th October, 1830, he says:—

"I hope indeed that the time will soon come when I may enter upon the great and interesting task of arranging my collections: for I now possess 15,000 species of plants, all gathered by my own hand in their natural places of growth. The most numerous order of plants in Brazil (that is from the tropic of Capricorn to the Equi-

* *Hooker, Sir W. J. Letters MSS. Vol. LXVI. No. 18.*

noctial Line, the northern limit of my travels) is the Compositae. Then follow the Gramineae, Rubiaceae, Malvaceae, Melastomaceae, Myrtaceae, Leguminosae, Orchideae, Terebinthaceae, Euphorbiaceae, Cyperoideae, Aroideae, Malpighiaceae, Acanthaceae, Bignoniaceae, Convolvulaceae, Apocineae, Scrophularineae, Solanaceae, Scitamineae, Guttiferae, Bromeliaceae, Urticeae, Salicariae, Annonaceae, Tilliaceae. These, though mentioned rather at random, will give you an idea of the Botany of my Brazilian Journey. It is remarkable that I scarcely found a single representative of the Order Cruciferae.

“According to an account kept in my geographical catalogue during my travels, I find I have 7,022 species, including a few I collected in Portugal, Madeira and Teneriffe. Probably I shall resolve on building another room or two to receive my collections; unless I can find a larger house near London which would in other respects be equally convenient with this I now inhabit; but I fear this would not be easily found. Your idea of engaging a person as Librarian or keeper of the collections, is one that ought to be adopted; but then unfortunately I have neither convenience for receiving such a person, nor the pecuniary means of supplying his salary. And I am already well aware that without some such assistance my progress in publishing my observations and discoveries will be slower than it ought to be.

“Of the fine things published by S. Hilaire, Martius and Pohl [all dealing with South American botany], most are familiar to me together with many others that are not noticed by them. While writing of such glorious things as I have met with, I lose all patience on feeling my hands, as it were, tied up from beginning to work on them.”

In a letter* written to Hooker on 1st November, 1830, Burchell gives an account of his itinerary under “a few heads which you may arrange or make use of as you please.” He then goes on to say:—

“I fear I shall lose much time before I am comfortably settled: nothing is more distressing to me than thus to be forced to delay my labors in arranging my collections and rendering them useful to science. . . . I cannot bring my mind to abandon any branch of natural history for the sake of giving more time and attention to any one in particular: although I know this is wrong and can never lead to perfection in any. Still, the contemplation of the whole system of created objects, is so fascinating, that it is very difficult to turn away from all but a few.

* *Hooker, Sir W. J. Letters MSS. Vol. LXVI. No. 19, Kew.*

"I have never heard of any 'person at the Cape leaving me a large sum of money'. Should it be so, I doubt whether I should be so glad at the good fortune, as sorry at the loss of a true friend, for such must be the person whose feelings would lead him to such an act. The newspapers are not to be believed: nor can I imagine the least foundation for such a report."

This rumour may have arisen from the fact that when R. A. Salisbury died in 1829, Burchell was his sole executor, and from the estate received about £6,000.

To Hooker's request for a description, in general terms, of the vegetation of Brazil, he replied:—

"You have from all quarters heard the most animated descriptions of the luxuriance and richness of the vegetation of Brazil: and with these I most warmly agree. But this is become almost a fashion, and in Europe, it seems the general opinion that the *whole* of that country is covered with the most magnificent forests, and of gigantic growths. This idea, though correct with respect to all the maritime districts, the courses of the rivers and the greater part of the country lying under the equinoctial line, is, however, not at all applicable to vast tracts in the provinces of San Paulo and Goyaz.

"There I have traversed boundless plains or open regions, some of them covered with fine pasture, formed by a great variety of the most interesting Gramineae: others with grasses intermingled with small plants and shrubs of the fine-leaved Melastomaceae, the Malpighiaceae, the herbaceous Rubiaceae, and Compositae: others with a varied clothing of annual and perennial flowers (although most disappearing during the dry season), faintly shaded or protected by extensive groves of low trees, of singular and stunted growth, rarely growing so close together as to form a thicket or impede the traveller. These arid groves have sometimes reminded me of the Acacia groves so predominant over the plains in the interior of Southern Africa. Yet it is rarely that one can compare African with Brazilian botany: their character, in many particulars, differs so widely: but I was a long time in Brazil before I saw such large trunks of timber as I have observed in some of the forests of the Cape Colony. I allude to the Podocarpi. These forests are indeed of no extent compared to those of America: but they afford specimens of sylvan scenery for the painter not less grand and beautiful: although they are generally deficient in that most splendid and noble feature, the Palm. [See Plate XI.]

"When, however, we descend towards the low latitudes of

Brazil, the glorious magnificence of the forests is truly astonishing, and none but those who are born in the midst of them can view such imposing productions of Nature without a feeling of awe or respect. She overloads herself, and one object oppresses and smothers another in the general struggle for luxuriance.

"The Bertholletia, and some species of Bombax, far overtop their vegetable brethren : and the trunks of the latter are really stupendous, both in height and thickness. I say nothing of the climbing plants, as they have been lately so often described : but we never can be silent with respect to the Palms : they abound in every latitude and situation, and their variety is far greater than any one traveller can form an idea of. They are of every size, from that of an ordinary herbaceous plant to that of the highest tree of the forest : but I think none surpass the Buriti or Miriti (*Mauritis vinifera*, Mart. tab. 38) in grandeur and imposing beauty : although his plate does not convey an idea of this character.

"Another plant of most extraordinary aspect and magnificence is the Araucaria : but this I never saw much to the northward of the city of San Paulo. It is only found at a great elevation, and I believe is not known to exist in the provinces of Goyaz and Pará.

"You ask whether the Barbaceneae abound. Of these I have found but few (if I recollect rightly), but the Vellosoiae, their nearest relations, cover whole plains in different latitudes in the interior : never in the forests. They give a singular and strange character to the landscape, not to be represented but by the pencil : they resemble some Draceneae. The Melastomaceae are found everywhere, and in every situation.

"The Vochisiaceae are numerous, and many are most beautiful flowering-trees, and afford excellent timber : they also affect various localities as do also the Myrtaceae. The Laurineae are numerous, particularly to the southward : but in Pará are species producing the finest cinnamon, and a kind of nutmeg is also found there.

"I conclude for want of room, but if you will mention what further information you wish, I will most readily resume the pen by return of post."

Naturally Hooker did not include that last sentence when he published the Burchell letter in the *Botanical Miscellany*, but it is, nevertheless, of some importance.

Burchell offered more from his pen but neither Hooker nor anyone else asked for it just when he was in the mood to give, and soon after this he was in the throes of legal matters as executor of the estates of Salisbury and of his father, so he did not continue writing.

His Brazilian Journals are still missing and that being so what he wrote to Hooker is all the more precious.

HIS MANUSCRIPTS.

He adopted the same method that he had used in South Africa when recording the particulars about the botanical specimens he gathered, and his *Catalogus Geographicus Braziliensis*, consisting of nine volumes, is in the Library of the Herbarium, Royal Botanic Gardens, Kew. It was more fully written up in the field than was his South African catalogue, for, as has been previously stated, he was frequently held up for long periods for lack of transport in Brazil and so had more time for writing than he had in South Africa.

There are many notes inserted in Part II of the *Memoranda Botanica*, which is the *Memoranda relating to Herbaria of Portugal, Madeira, Teneriffe and Brazil*.

Until such time as this world war ceases, there is no possibility of checking what notes have been made of these entries, so, for the present, no particulars of them will be given.

Pasted on to the last page of the volume is the following piece of gossip :—

“February, 1824, 25 Wednesday. Employed the rest of the day in the Library of the Linnean Society examining my African insects. Mr. Don [Librarian of the Linnean Society] tells me the following history of the manner in which Lambert became possessed of Ruisz and Pavon's herbarium—‘Ruisz and Pavon were so ill paid by the Spanish Government (their salary being many years in arrears) that they were almost starving or in the greatest poverty at Madrid, and at this time necessity drove them to offer their herbarium of 8,000 species to Sir James Smith for £600 who, being himself too poor to purchase, he proposed the bargain to Mr. Lambert who happening at that time to be in a very nervous and ill state of mind and body, hesitated as to accepting the terms. In the meantime Pavon had obtained some money from other sources in Madrid, and afterwards when Lambert had made up his mind to his terms (£600), they refused to sell at that sum, and the result was that Lambert paid £1,500 for the herbarium, besides what he paid for the books and engravings belonging to the Flora Peruviana.’ Whether this is a true statement of the transaction, I do not myself venture to affirm.”

No doubt this story was inserted because, at the date when Burchell wrote it, he was contemplating a visit to Peru. His wanderings did

not altogether finish when he settled at Fulham in 1830, but they were of a different nature to those he undertook in South Africa and Brazil, and will be considered in Part IV of this article.

BIOGRAPHICAL NOTES.

- (³⁸) SWAINSON, WILLIAM (1789-1855), spent his youth in Liverpool. He was keenly interested in Natural History. In 1807 he obtained a post in Malta. On the conclusion of peace he retired, but his love for travel took him to Brazil in 1816. In 1828 he visited Paris under the guidance of Cuvier and St. Hilaire. He went to New Zealand via Rio in 1837. He was engaged by the Government of Tasmania and Victoria to report on the timber trees of those colonies. He died in New Zealand.
- (³⁹) KER, J. BELLENDEN- (1765-1842), was for some time known as John Gawler, but in 1804 he was granted a licence to take the name of Ker-Bellenden though he was invariably known as Bellenden-Ker. In 1804 he wrote *A Memoir of Iridaceae*. He was editor of the *Botanical Register* from 1815-23. His last important botanical work was *Iridearum Genera*, published in Brussels in 1828.
- (⁴⁰) EDWARDS, SYDENHAM T. (1769-1819), was a draughtsman. From 1798-1814 he made all the drawings for the *Botanical Magazine*. From 1815-1819 his work was published in the *Botanical Register*.
- (⁴¹) HERBERT, WILLIAM (1778-1847), was a son of the first Earl of Carnarvon. He entered Parliament in 1806 but retired in 1812. He was ordained in 1814 and nominated to the valuable living of Spofforth in Yorkshire. He left there to become Dean of Manchester in 1840. For many years the pages of the *Botanical Register* and the *Botanical Magazine* were enriched by articles from his pen, particularly on the subject of bulbous plants. His standard work on *Amaryllidaceae* was issued in 1837.
- (⁴²) SMITH, SIR JAMES E. (1759-1828), was born at Norwich. He entered Edinburgh University to study medicine, but he abandoned that and took up botany as a career. He went to London where he formed a friendship with Sir Joseph Banks. He bought the Linnean collections, and when in 1814 the Linnean Society received a Royal Charter, he became the first President and received a knighthood. He was a man of means, and because of his lectures, researches, writings and collections, was universally acknowledged to be the outstanding authority on botanical science of his time.
- (⁴³) BROWN, ROBERT (1773-1858), began life as an army surgeon. Banks offered him the post of Naturalist to the *Investigator*, Captain Flinders (1801-5). His researches into the reproduction of plants were marked by discoveries which carried him as far as the conditions of the time allowed. He succeeded Dryander as Banks' librarian.
- (⁴⁴) AGARDH, CHARLES ADOLPHE (1785-1859), was Professor of Botany at Lund, Sweden. He was a member of the Swedish Academy and of the Academy of Science at Stockholm. His principal work was done in connection with *Algae*.
- (⁴⁵) WINCH, NATHANIEL (1769-1838), was one of the earliest writers to take philosophical views of the geographical distribution of plants. He studied Cryptogams, especially Mosses. He became an Associate of the Linnean Society in 1821, and to it bequeathed his MSS., library and herbarium, but a large part of it was ultimately handed over to the Natural History Society of Northumberland and Durham.
- (⁴⁶) ARNOTT, GEORGE A. W. (1799-1868), was born in Edinburgh and abandoned law for botany. He became acquainted with Greville and Hooker. In 1821 he worked in Paris and published two papers on Mosses. He returned to Scotland in 1831 and for ten years he published descriptions of new plants from South America and India. He was associated with Hooker in the work *British Flora*. He succeeded Hooker as Professor of Botany at the University of Glasgow.

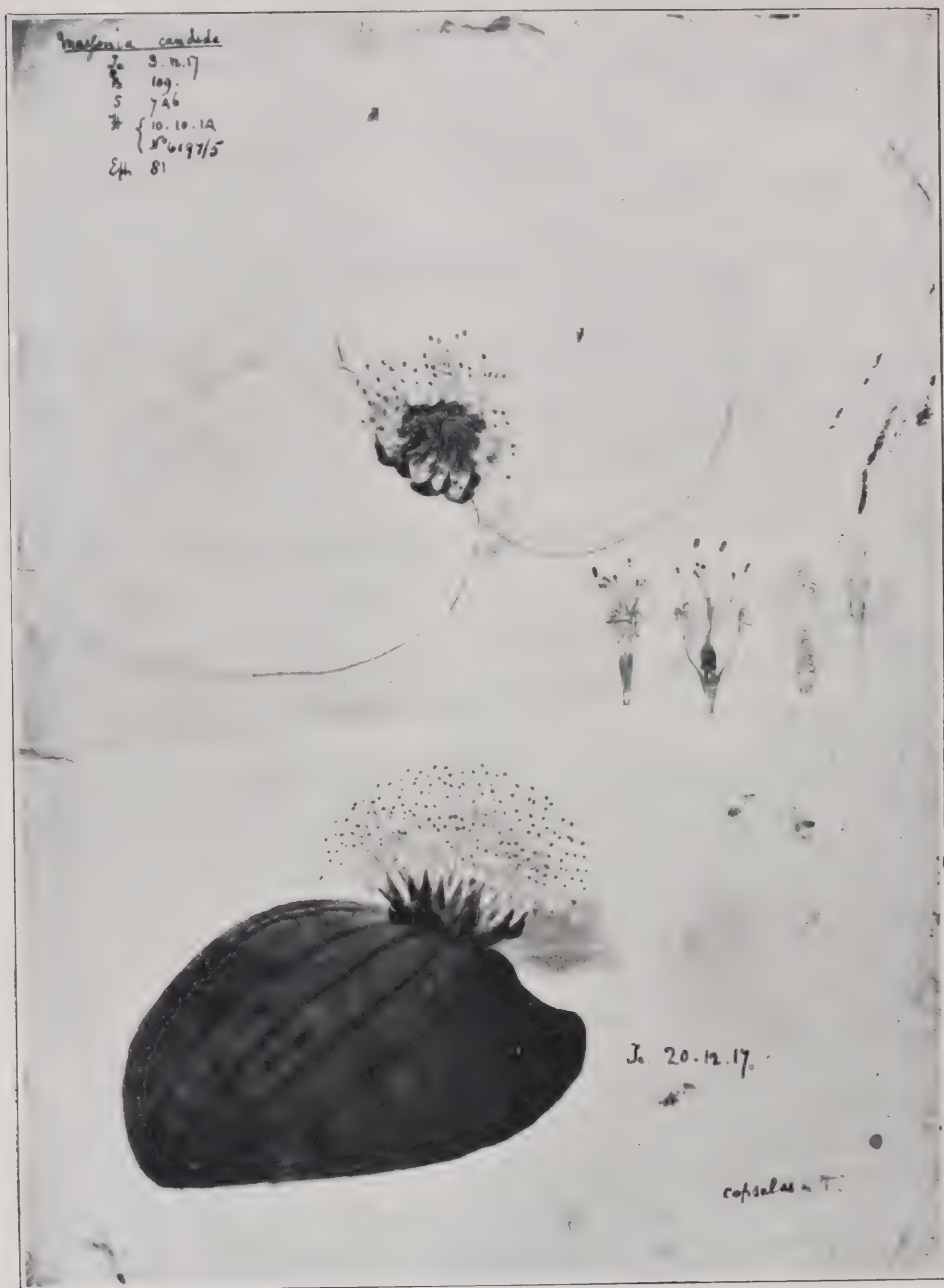


Hypoxis obtusa.

Drawing : Wm. J. Burchell.

By courtesy of Mrs. G. Burchell:

Photograph : James L. Smith, Johannesburg



Massonia longifolia var. *candida*.

Drawing : Wm. J. Burchell.

By courtesy of Mrs. E. Burchell.

Photograph : James L. Smith, Johannesburg.

PLATE XI.



Palms at San Paulo.
Drawing : Wm. J. Burchell. Copyright by the Gubbins Trustees.
Photograph : James L. Smith, Johannesburg



Map showing Burchell's route in Brazil.